HW #1

Read 1.1 - 1.3

1.1 - A: 2. Sentence only 24. Sentence only 28. Statement
1.1 - B: 2. T 6. F 8. T 12. T 14. F 18. F 20. T 24. T 26. F 30. F 32. F 34. F
1.1- C: 5. Valid 8. Valid
1.1 - D:
9. Unsound because it is invalid (it is itself a counterexample since the premises are true and the conclusion is false).
14. Unsound because it is invalid. A counterexample would be generated if we replace 'San Francisco' with 'Vancouver'.
1.2 - A: 11. T 24. F 29. F

1.2 - B:

3. 1. If A, then B
2. Not A
So, 3. Not B

None

6. 1. Either A or B
2. Not A
So, 3. B

Disjunctive syllogism

15. 1. A
2. Not B
So, 3. If A, then B

None

1.2 - C:

5. 1. Either A or B
2. If A, then C
3. If B, then D
So, 4. Either C or D

Constructive dilemma

12. 1. If A, then B
2. Not A
So, 3. B

None

1.2 - D:

2. 1. Either A or B
2. A
So, 3. Not B

None

5. 1. Either A or B
2. Not A
So, 3. B

Disjunctive syllogism

11. 1. If A, then B
2. If C, then A
So, 3. If B, then C

None

12. 1. If A, then B
2. If C, then D
3. Either A or C
So, 4. Either B or D

Constructive dilemma

1.3 - A:

1. (See 1.2.B.3)
    1. If Snoop Dog is president elect, then Snoop Dog is famous.
    2. Snoop Dog is not president elect.

    So, 3. Snoop Dog is not famous.

15. (See 1.2.D.2)
    1. Either Obama is president elect or Obama is in politics.
    2. Obama is president elect.

    So, 3. Obama is not in politics.

18. (See 1.2.D.11)
    1. If Alex Bundy is warm-blooded, then Alex Bundy is a mammal.
    2. If Alex Bundy is a gerbil, then Alex Bundy is warm-blooded.

    So, 3. If Alex Bundy is a mammal, then he is a gerbil.

1.3 - B:

2.
    1. All A are B
    2. All A are C

    So, 3. All C are B

Counterexample:
    1. All collies are dogs.
    2. All labs are dogs.

    So, 3. All labs are collies.

8.
    1. No A are B
    2. No B are C

    So, 3. No C are A

What better counterexample do we need than 8 itself? But here's one:
    1. No dogs are cats.
    2. No cats are collies.

    So, 3. No collies are dogs.

11.
    1. All A are B
    2. Some C are not A

    So, 3. Some C are not B

Counterexample:
    1. All collies are mammals.
    2. Some dogs are not collies.

    So, 3. Some dogs are not mammals.

17.
    1. All A are B
    2. Some B are C

    So, 3. Some C are A

Counterexample:
    1. All dogs are mammals.
    2. Some mammals are cats.

    So, 3. Some cats are dogs.